

WHAT IS CLAIMED IS:

1. Fluid dispensing apparatus, comprising:
a reservoir containing a quantity of fluid, said reservoir having an outlet;
a conduit having a proximal end connected to the outlet of the reservoir,
and having a distal end; and
a valve assembly, said valve assembly comprising:
a valve body, said body having an inlet and an outlet, and a fluid
flow path extending from said inlet to said outlet, said inlet being connected to the distal
end of the conduit;
a valve element having a first portion fixedly retained relative to
said valve body, and having a second portion movably retained relative to said valve
body, said second portion acting to selectively block and unblock the fluid flow path, and
an actuator, coupled to the second portion of the valve element, for
transmitting an applied force to the valve element to cause the second portion of the valve
element to move relative to the valve body.
2. The dispensing apparatus of Claim 1, wherein at least a
portion of said valve body is spherically shaped.
3. The dispensing apparatus of Claim 2, wherein said valve
body has a generally-circular cross section.
4. The dispensing apparatus of Claim 2, wherein said valve
body has a generally oval-shaped cross section.

5. The dispensing apparatus of Claim 1, wherein said valve body further comprises a surface formed internally of the valve body, and wherein said fluid flow path comprises a first bore extending from the inlet to said surface, and a second bore extending from the outlet to said surface.

6. The dispensing apparatus of Claim 4, wherein said second portion of said valve element is disposed adjacent said internal surface so as to selectively block and unblock at least one of said first and second bores.

7. The dispensing apparatus of Claim 6, wherein said valve element includes a projection which extends into one of said first and second bores so as to block the fluid flow path when the valve element is in a first position, and which is withdrawn from said bore when the valve element is moved to a second position.

8. The dispensing apparatus of Claim 7, wherein said projection extends from an approximate center of the second portion of the valve element and wherein at least one of the first and second bores extends into an approximate center of the internally-formed surface.

9. The dispensing apparatus of Claim 1, wherein said valve body is formed from a single piece of material.

10. The dispensing apparatus of Claim 1, wherein said valve body is formed of plastic, such as DELRIN™.

11. The dispensing apparatus of Claim 1, further comprising a nozzle coupled to the outlet of the valve body.

12. The dispensing apparatus of Claim 11, further comprising a plurality of interchangeable nozzles of varying sizes to regulate fluid flow through the outlet.

13. The dispensing apparatus of Claim 1, further comprising a retainer coupled to the valve body for retaining the valve element in position relative to the valve body.

14. The dispensing apparatus of Claim 13, wherein said retainer comprises a surface which fixes the first portion of the valve element relative to the valve body.

15. The dispensing apparatus of Claim 13, wherein said valve body has a threaded bore formed therein, and wherein said retainer is secured within said threaded bore.

16. The dispensing apparatus of Claim 1, further comprising a spring disposed around the second portion of the valve element to bias said second portion toward a position which blocks the fluid flow path.

17. The dispensing apparatus of Claim 16, further comprising a retainer coupled to the valve body, said retainer retaining said spring in position around the second portion of the valve element.

18. The dispensing apparatus of Claim 1, wherein said valve element comprises a disk-like portion having a groove formed in a surface thereof.

19. The dispensing apparatus of Claim 18, wherein said groove forms an area of reduced thickness in said disk-like portion, and wherein said first fixedly-retained portion of the valve element comprises an annular portion defined, at least in part, by said groove, and wherein said area of reduced thickness facilitates movement of said second movable portion.

20. The dispensing apparatus of Claim 18, wherein said valve element further comprises an elongate portion extending outwardly from said disk-like portion.

21. The dispensing apparatus of Claim 1, wherein said valve element is formed from a single piece of abrasion-resistant material, such as Teflon®.

22. The dispensing apparatus of Claim 21, wherein said valve element includes a stop to limit movement of the second portion thereof.

23. The dispensing apparatus of Claim 21, wherein said valve element comprises a disk-like portion and an elongate portion extending from a surface of said disk-like portion.

24. The dispensing apparatus of Claim 23, wherein said valve element has a groove formed in a surface thereof, and wherein said groove creates an area of reduced thickness in said disk-like portion.

25. The dispensing apparatus of Claim 24, wherein said area of reduced thickness is disposed between the first, fixedly-retained portion of the valve

element and the second movable portion of the valve element, and facilitates movement of said second portion.

26. The dispensing apparatus of Claim 1, wherein said actuator is a lever pivotally coupled to said valve element.

27. The dispensing apparatus of Claim 26, wherein said lever includes a camming surface to serve as a fulcrum for transmitting the applied force to the valve element.

28. The dispensing apparatus of Claim 27, wherein said lever is pivotally coupled to the second portion of the valve element, and further comprising a retainer coupled to the valve body for retaining the valve element in position relative to the valve body, and wherein said camming surface interacts with a surface of the retainer to cause the second portion of the valve element to move relative to the valve body.

29. The dispensing apparatus of Claim 26, wherein said lever has at least one opening formed therein.

30. The dispensing apparatus of Claim 1, further comprising a seal disposed between the first portion of the valve element and the valve body.